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THE CALIFORNIA FLOOD OF 1958

REPORT

OF THE

SPECIAL SUBCOMMITTEE TO INSPECT FLOODED AREAS IN CALIFORNIA

TO THE

COMMITTEE ON PUBLIC WORKS
HOUSE OF REPRESENTATIVES

APRIL 28, 1958

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LETTER OF SUBMITTAL

CONGRESS OF THE UNITED STATES,
HOUSE OF REPRESENTATIVES,
COMMITTEE ON PUBLIC AFFAIRS,
Washington, D. C. April 28, 1958.

Hon. CHARLES A. BUCKLEY,
Chairman, Committee on Public Works,
House of Representatives, Washington 25, D. C.

DEAR MR. CHAIRMAN: Pursuant to your appointing us as a special subcommittee to inspect flooded areas in northern and central California, the undersigned made that inspection on April 5, 6, 7, 8, and 9 and respectfully submit herewith a report of the flood damage together with recommendations for legislative action.

The report shows that damaging floods were caused by extra heavy rainfall in January, February, March, and April, ranging from 180 to 300 percent of normal. Preliminary estimates place the damage resulting at $32 million.

These same areas of California have been flooded at least 3 times in 8 years—in 1950, 1955, and again in 1958, with cumulative damages of $229,900,000.

Damage prevented in 1958 by completed flood-control projects and projects now under consideration amounted to $113 million. If all authorized flood-control projects had been completed and in operation, the damage prevented would have amounted to an additional $9 million, leaving $23 million damage caused in areas where projects are not yet authorized.

Even now, while waters from the most recent floods have receded to some extent, we know that we are faced with possibly further losses in the spring runoff of a snow pack that is 160 percent of normal.

The benefits and merits of completed flood-control projects are numerous:

1. Such projects protect many acres of valuable farm land, forest land, and grassland from erosion.
2. Such projects reduce silting and sediment in lower stream channels.
3. Such projects greatly reduce damage to homes and businesses which would otherwise be flooded in periods of heavy rainfall and potential flood conditions.
4. Such projects reduce loss of life, particularly along major rivers where levee breaks may result in immediate danger to residents living behind the levees.
5. Such projects make it possible to impound surplus water so that this water may be used during summer months when irrigation and domestic water becomes extremely valuable and essential in the state.

The undersigned are of the opinion that potential flood dangers are still increasing in some sections of the State of California. This is due to the following factors:

1. As new subdivisions and streets are constructed, the volume and speed of runoff is increased. Where formerly the rain fell on land which could absorb a considerable amount of the water, the rain now falls on rooftops, streets and sidewalks, which have no absorptive capacity, and which increase the flooding.

2. The steady reclamation of land in the major valleys of California through the erection of levees on both sides of river channels has restricted flood runoffs to more limited areas, and therefore increases the danger of levee breaks.

The undersigned feel that one of the major problems which exists at the present time is the long and slow-moving process under which flood-control projects are authorized and constructed.

This condition is aggravated by the existence of a large volume of flood-control surveys which have been authorized but have not yet been made; by a large volume of completed surveys which are now awaiting authorization as projects; by a large volume of authorized projects which have not yet received appropriations; and by the large volume of projects under construction among which annual appropriations for this purpose must be divided. The following figures are illustrative of this problem:

1. At present approximately $27 million is needed to complete flood-control and navigation surveys already authorized by Congress. The total appropriations for fiscal year 1958 for surveys of this type amounted to only approximately $7,690,000.

2. The total amount of flood-control projects which have been authorized by Congress, but for which no funds have been appropriated, amount to approximately $1,900 million. The total appropriations made by Congress in fiscal year 1958 for such flood-control projects amounted to only $123,800,000.

3. The total amount of navigation projects which have been authorized by Congress, but for which no funds have yet been appropriated, amount to approximately $1,600 million. The total appropriations made by Congress in fiscal year 1958 for such navigation projects amounted to only $144,100,000.

4. The total amount of multiple purpose projects (including power) which have been authorized by Congress, but for which no funds have yet been appropriated, amount to approximately $1,209,000. The total appropriations made by Congress in fiscal year 1958 for such multiple purpose projects amounted to only $133,100,000.

It is evident from the foregoing figures that at the rate of flood-control appropriations made in fiscal year 1958, it would require 15 years to complete flood-control projects which have been already authorized, let alone construct any projects which are still awaiting authorization or for which surveys are now in process or authorized.

In view of the flood damage inspected by the undersigned in the recent floods in California, and in view of the facts summarized in the attachment to this report, the undersigned submit the following

recommendations to the Committee on Public Works and the Committee on Appropriations of the House of Representatives:

1. It is recommended that appropriations for flood-control projects now under construction in the State of California and elsewhere be increased.

2. It is equally urgent that the timelag between the authorization of flood-control projects and the making of the first appropriations for these projects are reduced. This can only be done by increasing the total appropriations made each year for flood-control projects. We therefore recommend that future annual appropriations for flood-control projects be doubled as compared to the 1958 appropriation of $123,800,000.

3. It is essential that the lapse of time between the completion of a flood-control survey by the United States Army Corps of Engineers and the authorization of the flood-control project involved by Congress, be reduced. The undersigned recommend that every agency required to submit comments on such proposed projects assemble and make these comments on an urgent basis. The undersigned also recommend that Congress pass an omnibus rivers and harbors and flood-control bill each year, rather than only at 2-year intervals. As an example, the vetoes by the President of omnibus bills in 1956 and 1958 have resulted in no new flood-control projects being authorized for a period of 4 years.

4. Flood-control surveys which have been authorized should be completed more rapidly after authorization. In order to accomplish this objective, Congress should appropriate a larger sum per year for such surveys. We therefore recommend that future annual appropriations for surveys be doubled as compared to the 1958 appropriation of $7,690,000.

5. It is recommended that constant studies be conducted by local groups, by the California State Department of Water Resources, and by the United States Army Corps of Engineers, as to new potential flood-control projects needed in the State of California, for which surveys should be authorized at an early date, in order to determine the feasibility of such projects. It is evident that each additional flood-control dam built on tributaries of the Sacramento and San Joaquin Rivers will reduce the flood danger in the lower delta areas.

We would like to particularly commend the Army engineers—Brig. Gen. William F. Cassidy, the South Pacific division engineer; Col. A. E. McCollam, Sacramento district engineer; Col. J. S. Harnett, San Francisco district engineer; and members of their staff—for their keen interest in the flood problems of California and their detailed knowledge of every waterway, large and small, that poses a flood threat. Only through their outstanding cooperation were we able to obtain such detailed information in such a short time.

JOHN J. MCFALL,
JOHN F. BALDWIN,
Members of Congress.

APRIL 28, 1958.

THE CALIFORNIA FLOOD OF 1958

Preliminary Report on Floods of January–April 1958 in California

1. *Rainfall.*—Precipitation in late January and in February, March, and the first few days of April was unusually heavy in northern and central California, approaching record proportions at some locations. Particularly heavy storms occurred on February 18–19, February 23–25, March 17 and 23, and April 2–3. Rainfall over the major basins for the period February 1 to April 8, in terms of percent of normal, is shown in the following tabulation:

Precipitation

Basin:	*Percent of normal*
North coastal streams	180
San Francisco Bay area	300
South coastal streams	260
Sacramento Basin	270
San Joaquin Basin	280
Tulare Basin	220
Entire area	250

2. *Flood peaks.*—During the period from January 25 to April 9, outstanding peak flows were recorded on many streams. Peak flows at some key points are shown in the following tabulation:

Stream	Location	1958 floods		Previous peak flows in cubic feet per second	
		Date	Peakflow in cubic feet per second	1955	1950
Eel River	Fernbridge	Feb. 25	217,000	[1] 541,000	300,000
Russian River	Guerneville	do	67,000	[1] 90,100	58,600
Alameda Creek	Niles	Apr. 3	19,700	[1] 21,000	15,100
Guadalupe River	San Jose	Apr. 2	[1] 9,500	3,700	2,700
Pajaro River	Chittenden	Apr. 3	[1] 24,200	24,000	7,800
Sacramento River	Ord Ferry	Feb. 25	220,000	157,000	(2)
Cache Creek	Capay	do	[1] 52,000	23,000	14,200
Walnut Creek	Walnut Creek	Apr. 3	[1] 14,000	11,000	5,000
Calaveras River	Bellota	Apr 4	20,000	14,500	8,000
Littlejohn Creek	Farmington Reservoir (inflow)	do	[1] 33,000	20,000	5,000
San Joaquin River	Vernalis	Apr. 9	41,000	50,900	[1] 79,000

[1] Record peak.
[2] No flood.

3. *Flooded areas.*—Total area flooded amounted to about 600,000 acres. Major flooded areas included those on Russian River, 28,000 acres; Eel River, 15,000 acres; Alameda Creek, 8,000 acres; Guadalupe River, 5,000 acres; Pajaro River, 18,000 acres; Stony Creek, 18,000

acres; Sacramento River, 50,000 acres, not including 70,000 acres in bypasses and floodways; Butte Basin, 100,000 acres; Walnut Creek, 5,000 acres; Bear Creek (San Joaquin County), 15,000 acres; Calaveras River, 20,000 acres; San Joaquin River, 130,000 acres; and in Tulare Lake, 13,000 acres. Flooded areas are summarized by major basins in the following tabulation:

Area flooded

	Acres
North coastal streams	45,000
San Francisco Bay area	20,000
South coastal streams	25,000
Sacramento Basin	260,000
San Joaquin Basin	230,000
Tulare Basin	20,000
Total	600,000

4. *Total damages.*—Preliminary estimates have been made of the total cumulative damage from the January, February, March, and April floods in California. These estimates should be considered as rough approximations only. Better field estimates will be made later. These damages will be substantially increased during the coming snowmelt period, especially in the San Joaquin and Tulare Basins. Total damage is now estimated at about $32 million. The January and February floods caused damage of about $6,500,000. These floods struck principally on the coast north of San Francisco and on the Sacramento River and west-side tributaries. Relatively minor floods occurred in March at scattered locations in the San Joaquin and Tulare Lake Basin. Severe flooding occurred in early April inflicting about $24 million damage, of which about $3 million was on San Francisco Bay streams, about $5,700,000 was on coastal streams south of San Francisco Bay, and about $13 million was in the San Joaquin Basin. Damages for major areas are presented in detail in the following paragraphs.

5. *North coastal streams.*—Flood damages were about $1,200,000, excluding about $700,000 slide damage to Northwestern Pacific Railroad facilities, part of which may have been aggravated by stream erosion. Damages on the Russian and Eel Rivers amounted to about $800,000 and $200,000, respectively.

6. *Streams tributary to San Francisco Bay area.*—Damages of about $3,100,000 in this area were caused almost entirely by the April floods. The largest concentrations of damage occurred on Alameda Creek and Guadalupe Creek, where losses were about $700,000 and $600,000, respectively.

7. *South coastal streams.*—Damages of about $5,700,000 in this area were caused entirely by the April floods. The Pajaro and Salinas Rivers suffered losses of about $4,100,000 and $1,000,000, respectively.

8. *Sacramento Basin.*—The combined damage in the basin totaled about $7,100,000. About $2,250,000 damages occurred in the Cache Creek Basin, of which $450,000 was on Middle and Clover Creeks; $1,000,000 was around the shoreline of Clear Lake, resulting from high lake stages; and $650,000 was along lower Cache Creek. About $550,000 damages also occurred on Stony Creek. Damages along the main Sacramento River, Butte Basin, and bypasses accounted for about $3,000,000.

9. *San Joaquin Basin.*—Damages in the San Joaquin Basin, including about $4,500,000 in the Walnut Creek area, totaled about $13,600,000. Flooding along the Calaveras River, particularly at Stockton, accounted for about $2,500,000 damages.

10. *Tulare Basin.*—Damages in Tulare Basin, primarily from the waters of Kaweah and Tule Rivers, totaled about $1,300,000.

11. *Comparison of damages.*—Damages in the major areas are summarized in the following tabulation. For comparative purposes, damage data for two other recent floods are also listed. Damages are estimated on the basis of price level and economic development prevailing at the time of each flood.

Basin	1958 floods	1955 floods	1950 floods
North coastal streams	$1,200,000	$41,200,000	[1]
San Francisco Bay area	3,100,000	13,200,000	[1]
South coastal streams	5,700,000	13,200,000	[1]
Sacramento Basin	7,100,000	66,000,000	$9,800,000
San Joaquin Basin	13,600,000	16,100,000	12,400,000
Tulare Basin	1,300,000	16,600,000	9,400,000
Total	32,000,000	166,300,000	31,600,000

[1] Minor.

12. *Loss of life.*—It has been reported that about 10 persons lost their lives as a result of the January–April flood series. The extent to which the flood was primary cause of death in each case has not been determined. The streams where the loss of life has been reported are:

Corte Madera Creek	1	Dry Creek (near Roseville)	1
Morrison Creek	1	Willow Creek	2
Sacramento River	2	Ponoche Creek	1
Cache Creek	1	Mokelumne River	1

13. *Damages prevented by completed works of the Corps of Engineers.*—A rough estimate of the damage prevented by completed flood-control projects and projects now under construction is given in the following tabulation:

Completed projects:	
Pajaro River levee project	$800,000
Farmington Reservoir	3,000,000
Merced County stream group	5,600,000
Big Dry Creek Reservoir	1,000,000
Pine Flat Reservoir	1,600,000
Folsom Reservoir	[1]
American River levees	[1]
Subtotal	12,000,000
Projects under construction:	
Russian River Reservoir project	300,000
San Lorenzo River channel improvement	0
Sacramento River flood control project	100,000,000
Sacramento River major and minor tributaries	[1]
Tuolumne River reservoirs (including Cherry Valley and New Don Pedro)	700,000
Lower San Joaquin levees	0
Subtotal	101,000,000
Total	113,000,000

[1] Nominal.

14. *Damages preventable by authorized projects of the Corps of Engineers.*—If all the authorized flood-control projects had been completed and in operation, the $32 million damage that occurred during the recent floods would have been reduced approximately as follows:

Projects under construction:	
Russian River Reservoir project	$260,000
San Lorenzo River channel improvement	50,000
Sacramento River flood-control project	200,000
Sacramento River major and minor tributaries	800,000
Tuolumne River reservoirs (including Cherry Valley and New Don Pedro)	700,000
Lower San Joaquin levees	730,000
Subtotal	2,740,000
Authorized projects not started:	
San Lorenzo Creek channel improvement	250,000
Coyote Creek channel improvement	10,000
Middle Creek project	450,000
Black Butte Reservoir	550,000
Iron Canyon Reservoir	1,300,000
New Melones Reservoir	700,000
Bear Creek project (San Joaquin County)	1,200,000
Hogan Reservoir project	600,000
Success Reservoir	600,000
Terminus Reservoir	600,000
Subtotal	6,260,000
Total	9,000,000

15. *Summary.*—Following is a brief summary of the data presented in this report.

Basin	Rainfall in percent of normal Feb. 1–Apr. 8	Area flooded	Flood damage	Damages preventable by authorized projects	Residual damage	Damages prevented by completed works
	Percent	*Thousand acres*	*Thousands*	*Thousands*	*Thousands*	*Thousands*
North coastal	180	45	$1,200	$260	$940	$300
San Francisco Bay	300	20	3,100	260	2,840	0
South coastal	260	25	5,700	50	5,650	800
Sacramento	270	255	7,100	3,300	3,800	100,000
San Joaquin	280	230	13,600	3,930	9,670	10,300
Tulare	220	25	1,300	1,200	100	1,600
Total	250	600	32,000	9,000	23,000	113,000

Supplemental Information

Flood damage along the Fresno and Chowchilla Rivers were estimated at $600,000 this spring, of which it is estimated $250,000 could have been prevented by the Hidden Reservoir on the Fresno River and $250,000 could have been prevented by the Buchanan Reservoir on the Chowchilla River.

In addition to the direct damage along the Fresno and Chowchila Rivers, water from these sources contributed to the overall flood problems of the San Joaquin River with an estimated peak of 11,000 cubic feet per second pouring into the San Joaquin from the Fresno River and 14,000 cubic feet per second from the Chowchilla River on April 3 this year. This compares to record flows of 17,000 cubic feet per second on the Fresno River and 30,000 cubic feet per second on the Chowchilla River, both in December of 1955.

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